

REMARKS/ARGUMENT

Description of amendments

Claims 1-98 are canceled. Claims 151-158 are new. Claims 99-158 are pending after entry of this Amendment.

The claims have been amended so that claims 99-136 now depend from new independent claim 151. No new matter has been introduced. The claim amendments are supported by the application as originally filed (see, for example, Publication No. 20040226982 paragraph 17 disclosing a “green compact”, paragraph 252 disclosing a “60-99.99%” content, and paragraph 253 disclosing the purity of iron).

Reconsideration and removal of the rejections are respectfully requested in view of the foregoing amendments and remarks presented below.

Title of Invention

As shown in the foregoing amendments, Applicants have amended the title as suggested by the examiner.

Drawings

Applicants have amended FIG. 1 to include reference numeral 109 pointing to the rearward opening cavity described in paragraph 310 of the specification, as requested by the Examiner.

Amendment to the Specification

Applicants have amended the status of U.S. Application No. 10/719,001 at page 1 of the specification, as requested by the Examiner.

Rejections under 35 U.S.C. §102

Claims 99, 111-114, 116, 117, 133, 135 and 136 were rejected under 35 U.S.C. 102(b) as being anticipated by Weller (US Patent No. 5,553,767).

As shown on the above listing of claims, claims 99, 111-114, 116, 117, 133, 135 and 136 now depend from new independent claim 151. Claim 151 recites, in part:

forming a metal particle sintered member by sintering a base material, wherein the weight content of the sintering base material in the metal particle sintered member is **between 60% and 99.99%** . . .

(emphasis added). Weller fails to teach the above limitation of claim 151. Weller teaches a soldering tip “comprising 50-90 weight percent uncoated copper particles and 5-50 weight percent iron particles...” Iron is a sintering base material and copper is an additive. Therefore, Weller fails to teach a sintering base material weight content between 60% and 99.99% in the solder tip. Accordingly, Applicants respectfully submit that claim 151 is patentably allowable over Weller. Claims 99, 111-114, 116, 117, 133, 135 and 136 depend from claim 151 and are patentably allowable for at least the same reason as claim 151.

Regarding claim 111, 117, and 136, the Examiner has cited col. 1, lines 22-23 as meeting the limitation of an iron cap. However, the cited portion of Weller only discloses “electroplating iron onto the copper tips” and provides no disclosure or suggestion of an iron cap. For this additional reason, Applicants respectfully submit that claim 111 is patentably allowable over Weller.

Regarding claim 112, Weller fails to teach “forming a longitudinal through-passageway in the copper or copper alloy core” as recited in claim 112. The Examiner has erroneously asserted that this limitation is met by elements 34 and 36 of Weller FIGS. 3 and 4, respectively. Applicants note that elements 34 and 36 do not have a “through-passageway.” As clearly seen in Weller FIGS. 3 and 4, elements 34 and 36 have blind holes that have dead ends and, therefore, are not through-passageways. For this additional reason, Applicants respectfully submit that claim 112 is patentably allowable over Weller.

Further in regard to claim 116, Weller fails to teach “metal injection molding the base material to be a cap” as recited in claim 116. Applicants note that Weller teaches ordinary powder compacting or pressing methods that are very different from metal injection molding. In Weller, “punches form a compact 34 in a die”, “powdered metal is ... compacted by a hydraulic press” and “rod 32 is used as one of the punches in the hydraulic press” (col. 4, lines 32-51).

There is no disclosure in Weller of an injection machine or that the methods in Weller involve metal injection molding. Metal injection molding is patentably distinct from the powder pressing methods of Weller. For this additional reason, Applicants respectfully submit that claim 116 is patentably allowable over Weller.

Rejections under 35 U.S.C. 103(a)

I.

Claims 105 and 119-124 were rejected under 35 U.S.C. 103(a) as being unpatentable over Weller (US Patent No. 5,553,767) as applied to claims 99 and 114 above and further in view of Nippert (US Patent No. 4,345,136).

Claims 105 and 119-124 depend from new claim 151, which is patentably allowable over Weller as discussed above. Claim 151 is also patentably allowable over Weller in view of Nippert since Nippert fails to teach the limitation in claim 151 regarding base material weight content. Accordingly, Applicants respectfully submit that claims 105 and 119-124 are patentably allowable over Weller in view of Nippert for at least the same reason as claim 151.

II.

Claims 103, 104, 107-110, and 125-134 were rejected under 35 U.S.C. 103(a) as being unpatentable over Weller (US Patent No. 5,553,767) as applied to claims 99 and 114 above and further in view of Steine et al. (US Patent No. 4,052,531).

Claims 103, 104, 107-110, and 125-134 depend from new claim 151, which is patentably allowable over Weller as discussed above. Claim 151 is also patentably allowable over Weller in view of Steine et al. since Steine et al. fail to teach the limitation in claim 151 regarding base material weight content. Accordingly, Applicants respectfully submit that claims 103, 104, 107-110, and 125-134 are patentably allowable over Weller in view of Steine et al. for at least the same reason as claim 151.

III.

Claim 106 was rejected under 35 U.S.C 103(a) as being unpatentable over Weller (US Patent No. 5,553,767) as applied to claim 99 above and further in view of Nippert (US Patent No. 4,345,136) and Pietrocini et al. (US Patent No. 3,894,678).

Claim 106 depends from new claim 151, which is patentably allowable over Weller in view of Nippert as discussed above. Claim 151 is also patentably allowable over Weller in view of Nippert and Pietrocini et al. since Pietrocini et al. fail to teach the limitation in claim 151 regarding base material weight content. Accordingly, Applicants respectfully submit that claim 106 is patentably allowable over Weller in view of Nippert and Pietrocini et al. for at least the same reason as claim 151.

IV.

Claims 100 and 102 were rejected under 35 U.S.C. 103(a) as being unpatentable over Weller (US Patent No. 5,553,767) as applied to claims 99 above and further in view of Davis et al. (US Patent No. 4,995,921).

Claims 100 and 102 depend from new claim 151, which is patentably allowable over Weller as discussed above. Claim 151 is also patentably allowable over Weller in view of Davis et al. since Davis et al. fail to teach the limitation in claim 151 regarding base material weight content. Accordingly, Applicants respectfully submit that claims 100 and 102 is patentably allowable over Weller in view of Davis et al. for at least the same reason as claim 151.

The Examiner stated that "Davis et al. teaches applying alcohol as a vehicle in the brazing filler." Applicants respectfully disagree. Davis et al. describes only a soldering filler, that is a "soldering paste," and does not describe a brazing filler. The American Welding Society defines brazing as "a joining process whereby a non-ferrous filler metal or alloy is heated to melting temperature above 450°C (842°F)" (*see* <http://en.wikipedia.org/wiki/Brazing>, stating that "this is the official American Welding Society definition"). Davis et al. describes the composition of a solder powder mixed with alcohol in the table of Example 3 (col. 3, lines 1-6) as being "Sn/Pb/Ag solder powder (— 300/200 mesh)". This solder powder composition of tin, lead, and silver in Davis et al. would have a melting point that is too low for brazing, unlike

silver solder that is used for brazing. Silver solder, also known as silver-brazing alloy, is defined as a “solder composed of silver, copper, and zinc, having a melting point ... higher than lead-tin solder” (McGraw-Hill Dictionary of Scientific and Technical Terms, 6th ed., *also see* Twysted-Pair Dictionary of Electronics Terms at <http://www.twysted-pair.com/dicts.htm>). Because the Sn/Pb/Ag solder powder of Davis et al. is unsuitable for brazing, Davis et al. fail to teach applying alcohol as a vehicle in a brazing filler. For this additional reason, Applicants respectfully submit that claims 100 and 102 are patentably allowable over Weller in view of Davis et al.

V.

Claims 101 and 118 were rejected under 35 U.S.C. 103(a) as being unpatentable over Weller (US Patent No. 5,553,767) as applied to claims 99 and 114 above and further in view of Rhoads et al. (US Patent No. 3,006,069).

Claims 101 and 118 depend from new claim 151, which is patentably allowable over Weller as discussed above. Claim 151 is also patentably allowable over Weller in view of Rhoads et al. since Rhoads et al. fail to teach the limitation in claim 151 regarding base material weight content. Accordingly, Applicants respectfully submit that claims 101 and 118 is patentably allowable over Weller in view of Rhoads et al. for at least the same reason as claim 151.

New Claims

Claim 151 has already been discussed above. Claims 152-158 depend from claim 151 and are patentable over the cited references for at least the same reason as claim 151.

Conclusion

In light of the foregoing claim amendments and remarks, this application is considered to be in condition for allowance, and early passage of this case to issue is respectfully requested. If necessary to effect a timely response, this paper should be considered as a petition for an Extension of Time sufficient to effect a timely response, and please charge any deficiency in fees

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or credit any overpayments to Deposit Account No. 05-0150.

Respectfully submitted,

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